

REMARKS

Claim 1 has been amended. Accordingly, claims 1-18 are currently pending in the application, of which claims 1 and 16 are independent.

Applicants respectfully submit that the above amendment does not add new matter to the application and is fully supported by the specification. Support for the amendment may be found at least in Figures 4 and 8 and at page 7, lines 7-10 and page 9, lines 14-20 of the specification.

In view of the above amendment and the following Remarks, Applicants respectfully request reconsideration and timely withdrawal of the pending rejections for the reasons discussed below.

Rejections Under 35 U.S.C. § 102

Claims 1, 3 and 4 stand rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by U.S. Patent Application Publication No. 2002/0149314 applied for by Takahashi, *et al.* ("Takahashi").

In order for a rejection under 35 U.S.C. § 102(b) to be proper, a single reference must disclose every claimed feature. To be patentable, a claim need only recite a single novel feature that is not disclosed in the cited reference. Thus, the failure of a cited reference to disclose one or more claimed features renders the 35 U.S.C. § 102(b) rejection improper.

Claim 1, as amended, recites, *inter alia*:

at least two heat sinks of electrically and thermally conductive metallic materials, the heat sinks being separated from each other and the at least two lead terminals, and fixed to the main body, wherein a lower portion of each of the at least two heat sinks is exposed to the outside of the bottom surface of the main body through the opening of the main body (emphasis added)

Takahashi fails to disclose at least this feature of amended claim 1.

Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. § 102(b) rejection of claim 1. Claims 3 and 4 depend from claim 1 and are allowable at least for this reason. Since none of the other prior art of record discloses or suggests all the features of the claimed invention, Applicants respectfully submit that independent claim 1, and all the claims that depend therefrom, are allowable.

Claims 1-5 and 16-18 stand rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by U.S. Patent No. 4,126,882 issued to Carson, *et al.* ("Carson"). Applicants respectfully traverse this rejection for at least the following reasons.

In order for a rejection under 35 U.S.C. § 102(b) to be proper, a single reference must disclose every claimed feature. To be patentable, a claim need only recite a single novel feature that is not disclosed in the cited reference. Thus, the failure of a cited reference to disclose one or more claimed features renders the 35 U.S.C. § 102(b) rejection improper.

Claim 1, as amended, recites, *inter alia*:

an insulation main body having an opening to a bottom surface

at least two heat sinks of electrically and thermally conductive metallic materials, the heat sinks being separated from each other and the at least two lead terminals, and fixed to the main body, wherein a lower portion of each of the at least two heat sinks is exposed to the outside of the bottom surface of the main body through the opening of the main body

The Office Action states that Carson teaches an insulation main body having an opening to a bottom surface [O], and at least two heat sinks [HS1] & [HS2] (Office Action, page 4).

Applicants disagree. First, Carson fails to teach "an insulation main body having an opening to a bottom surface", as recited in claim 1, because the connector pin retainer blocks 76 cited by

the Office Action can not be considered “an insulation main body”. Carson teaches that a base structure 12 includes multiple retainer blocks 76 (Fig. 1d; col. 3, lines 22-26). Considering Carson’s retainer blocks 76 as “an insulation main body” is not a reasonable interpretation of the claim language. Although claims are to be “given their broadest reasonable interpretation consistent with the specification,” the broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach. *In re Cortright*, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999) MPEP §2111. A skilled artisan would not consider the retainer blocks 76 disclosed by Carson to be “an insulation main body having an opening” because Carson refers to the retainer blocks as separate elements that are part of the base structure 12 (see, for example, col. 3, lines 24-31 and 38-44). Thus, it is unreasonable to consider these two separate elements as a “main body having an opening”, because there is no main body, just separate retainer blocks.

Second, Carson fails to teach “at least two heat sinks ... the heat sinks being separated from each other” as recited in claim 1. Carson discloses a plate 18 which is part of the base structure 12 (Fig. 1c; col. 3, line 18). Considering the plate 18 to be “at least two heat sinks” is not a reasonable interpretation of the claim language because a skilled artisan would not consider the single plate 18 as “two heat sinks”. Even though there are openings in the plate 18 to accommodate the retainer blocks 76, a skilled artisan would consider the plate to be only a single heat sink, based on Carson’s disclosure (see col. 2, lines 65-69: “base member plate 18 which may ... provide a heatsink”). Also, by basing analysis only on the cross sectional view of Fig. 2, the Office Action impermissibly fails to consider the reference as a whole. Fig. 1c clearly shows that the left and right sides of the plate 18 are not separated. Thus, it is unreasonable to consider the plate 18 as “at least two heat sinks”, because the plate 18 is a single, contiguous

body that, at best, forms only one heat sink. Therefore, the Office Action fails to establish a *prima facie* case of anticipation of claim 1 for at least these reasons.

The Office Action fails to establish a *prima facie* case of anticipation of claim 16 for at least the reasons recited above with respect to claim 1.

Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. § 102(b) rejection of claims 1 and 16. Claims 2-5 and 17-18 depend from claims 1 and 16, respectively, and are allowable at least for this reason. Since none of the other prior art of record discloses or suggests all the features of the claimed invention, Applicants respectfully submit that independent claims 1 and 16, and all the claims that depend therefrom, are allowable.

Rejections Under 35 U.S.C. § 103

Claims 1-10, 12-13 and 15 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over U.S. Patent No. 6,335,548 issued to Roberts, *et al.* ("Roberts") in view of U.S. Patent No. 4,126,882 issued to Carson, *et al.* ("Carson"). Applicants respectfully traverse this rejection for at least the following reasons.

To establish an obviousness rejection under 35 U.S.C. § 103(a), four factual inquiries must be examined. The four factual inquiries include (a) determining the scope and contents of the prior art; (b) ascertaining the differences between the prior art and the claims in issue; (c) resolving the level of ordinary skill in the pertinent art; and (d) evaluating evidence of secondary consideration. *Graham v. John Deere*, 383 U.S. 1, 17-18 (1966).

In view of these four factors, the analysis supporting a rejection under 35 U.S.C. 103(a) should be made explicit, and should "identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements" in the manner claimed. *KSR Int'l. Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 82 USPQ2d 1385, 1396 (2007). The

Federal Circuit requires that "rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006).

Finally, even if the prior art may be combined, there must be a reasonable expectation of success, and the reference or references, when combined, must disclose or suggest every claimed feature. *See in re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The Office Action fails to establish a *prima facie* case of obviousness of claim 1 at least because the examiner can not reasonably rely on Robert's dies 1910 and 1911 to teach the heat sinks of claim 1 (Office Action, page 8).

Please refer to Applicants' remarks on pages 6-10 of Applicants' Reply dated June 24, 2009, which respond to the Non-Final Office Action dated April 28, 2009, pages 6-8 of Applicants' Reply dated January 13, 2010, which respond to the Final Office Action dated October 27, 2009, and pages 2-3 of Applicants' Pre-Appeal Brief Request for Review dated January 27, 2010. Applicants respectfully submit that the Office Action fails to establish a *prima facie* case of obviousness for at least the reasons noted in those remarks.

The Office Action fails to correct the deficiencies in the previous Office Actions, despite the Panel Decision from Pre-Appeal Brief Review dated March 9, 2010, which reopened prosecution and withdrew the rejections from those Office Actions.

Even though the Office Action rejects claims 1-10, 12-13, and 15 over Roberts in view of Carson rather than Pederson, the erroneous nature of the rejection which was withdrawn by the Panel Decision has improperly been maintained. Particularly, the rejection of the element of claim 1 "at least two heat sinks of electrically and thermally conductive metallic materials" has been maintained without significant modification. As argued in previous Replies, the Office

Action cannot reasonably rely on Roberts's dies 1910 and 1911 to teach the heat sinks of claim 1 because a "heat sink" does not include any element that conducts heat, and a skilled artisan would not interpret the term "heat sink" to encompass a cathode of Roberts's dies 1910 and 1911.

Also, the Office Action's contradictory statements in Roberts regarding heat sinks can not support a *prima facie* case of obviousness. On page 8 of the Office Action, the examiner says Roberts's dies 1910 and 1911 teach HS1 and HS2 of electrically and thermally conductive materials (Office Action, page 8). In the very next sentence, however, the Office Action says Roberts's Figs. 19A-19B do not disclose a heat sink of electrically and thermally conductive metallic materials. The Office Action goes on to rely on a metallized bond pad 502 from the embodiment shown in Fig. 5 to teach the heat sinks recited in claim 1. Thus, the Office Action creates confusion as to whether Roberts's dies are relied on to teach the heat sinks as recited in claim 1. The Office Action fails to establish a *prima facie* case because these contradictory statements make it impossible for Applicants to properly respond to the rejection.

Even if the Office Action was sufficiently clear so it may be understood which element the Office Action intends to function as the heat sink, the Office Action provides no support why a skilled artisan would be prompted to use Roberts's bond pad 502 from the embodiment shown in Fig. 5 as a heat sink in the embodiment shown in Fig. 19. Further, a skilled artisan would not be prompted to use the bond pad 502 of Fig. 5 to teach the heat sinks of claim 1 at least because the bond pad 502 is a single element. Therefore, the Office Action fails to establish a *prima facie* case of obviousness of claim 1 for at least these reasons.

Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. § 103(a) rejection of claim 1. Claims 2-10, 12-13, and 15 depend from claim 1 and are allowable at least for this reason. Since none of the other prior art of record, whether taken alone or in any

combination, discloses or suggests all the features of the claimed invention, Applicants respectfully submit that independent claim 1, and all the claims that depend therefrom, are allowable.

Claims 11 and 14 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over U.S. Patent No. 6,335,548 issued to Roberts, *et al.* ("Roberts") in view of U.S. Patent No. 4,126,882 issued to Carson, *et al.* ("Carson") and further in view of U.S. Patent No. 6,590,343 issued to Pederson, *et al.* ("Pederson"). Applicants respectfully traverse this rejection for at least the following reasons.

Applicants respectfully submit that claim 1 is allowable over Roberts and Carson, and Pederson fails to cure the deficiencies of Roberts and Carson noted above with regard to claim 1. Hence, claims 11 and 14 are allowable at least because they depend from an allowable claim 1.

Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. § 103(a) rejection of claims 11 and 14.

CONCLUSION

A full and complete response has been made to the pending Office Action, and all of the stated grounds for rejection have been overcome or rendered moot. Accordingly, all pending claims are allowable, and the application is in condition for allowance.

The Examiner is invited to contact Applicants' undersigned representative at the number below if it would expedite prosecution. Prompt and favorable consideration of this Reply is respectfully requested.

Respectfully submitted,

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